Agency: U.S. Environmental Protection Agency

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Ongoing support to Ukraine: We are not currently engaged in support projects with Ukraine,

Ex. 6 Personal Privacy (PP)

Outstanding asks from Ukraine to your agency: To assist Ukraine with assessment and assistance regarding handling and managing war related waste and environmental damages.

Agency capabilities:

Assessing and valuing ecosystem services and environmental degradation -

- Environmental economists with high-level expertise in valuing losses of ecosystem services and other environmental degradation. This expertise has been used in a variety of settings:
    a. Valuing damages from oil spills (both fresh and ocean waters)
    b. Forest fires
    c. Chemical spills
    d. Industry releases of air pollution
    e. Discharges of environmental contaminants into water.
    f. Losses from destruction of wetlands and other ecosystem resources
- Ecologists, environmental engineers, and other environmental scientists that can identify causes of environmental degradation, map, the loss of environmental and ecosystem services to beneficiaries and work with economists (cited in 1 above) to value these damages.
- EPA has expertise (both in environmental economics and the environmental sciences) on the design and implementation of the United Nations Framework for natural capital accounts. The U.N. framework — the System of Environmental-Economic Accounting—Ecosystem Accounting (SEEA EA) — was adopted by the UN Statistical Commission and marks a major step forward that goes beyond the commonly used statistic of gross domestic product (GDP) that has dominated economic reporting since the end of World War II. This measure would ensure that natural capital—forests, wetlands, and other ecosystems—are recognized in economic reporting. EPA scientists also contributed to the development of this U.N. framework and other natural capital accounting frameworks. Such frameworks would provide the basis for inventorying and valuing changes in ecosystem services with a globally recognized approach.

- Experts across disciplines on the use of satellite and other remote sensing data that can provide key quantitative metrics for changes in environmental quality. Such data could drive valuation

Waste Management –

Lines of support include:

- Specialized field experience and provide field support in remedial/removal and response functions/natural disasters/oil spills, and consultation. Experts provide field technical expertise for On Site Coordinators - contaminated transport/site specific radiological support/human health/risk assessment/air sampling/vapor intrusion/community air monitoring/ hydrogeological monitoring/QAQC/data management/data interpretation/storage and use of data/health and safety issues/data visualization.
- Specialized expertise in remediating environmental contaminants in urban areas.
- Site characterization and remediation and restoration, waste management and disposal tools, waste water assessment and methods of disposal.
- Advise on high-throughput lab analysis of organics, including chemical warfare and pharmaceutical-based agents;
- Expertise on standing-up and maintaining mobile and expeditionary labs;
- Expertise on the collection, quality assurance, and use of airborne remote sensing of chemical and radiological threats;
- Protection of response personnel from chemical, biological, and radiological threats;
- Characterization and sampling of chemical, biological, and radiological threats; and,
- Operational and field-expedient (e.g., application of "commercial, off the shelf" technology) approaches to the decontamination and waste management of wide-area of chemical, biological, and radiological events.
- Contaminant Fate and Transport (e.g., groundwater and contaminant modeling)
- Site-specific Radiological Response and Support
- Decontamination and disposal of contaminated soils, water and sediments.
- Human Health, Environmental, and Ecological Risk Assessment
- Air Sampling (including indoor air, vapor intrusion and community monitoring)
- Hydrogeological & Geotechnical support (e.g., site investigations, including geophysics)
- Field & Lab Analytical Support; TAGA; QA/QC
- Remedial Design, Implementation & other Engineering support
- Community Air Monitoring & Sampling
- Data Management: Planning, Collection, Storage, Use of Data
- Health and Safety
- Quality Assurance
- Decision Support Tools– Data visualization and Telemetry Support
- Waste management and decontamination of wide areas and media solutions that help off-the-shelf technologies.
- Expertise on the protection of personnel as Ukraine will look for a large number of people who will be involved in waste and treatment and assessment of damage.
- Potentially could provide advice on remote sensing and interpretation. Personnel have experience in data and remote sensing.

- Vast experience in natural disasters but that can translate when it comes to technical advice or evaluating environmental impacts (hazmat/oil releases) in monitoring and refining where we might have opportunity to provide support.
- In cooperation with DoD, technical advice on clean-up of military sites.
- Biology/chemistry/risk assessment experts.
- Tools for assessing and how to treat waste from wide-area incidents.
- How to decontaminate in different scenarios.
- Environmental health risk communication.
- Exposure and risk analysis for human health issues or chemicals and pesticides.
- Safe use of disinfectants.
- Disinfecting food processing areas.
- Related to effects of radiation, can provide protective action guidance and expertise in decontamination techniques and waste handling procedures and waste disposal.

Legal Redress -

- Forensic sampling and level A sampling
- Guidance on human rights connection to environmental destruction
- Preserving evidence
- Forensic evaluation for chemical activities.
- Analysis on environmental damage events (adulterated agricultural commodities), human health and ecological risk assessment.
- Guidance and best practices for environmental crimes, later (after the war has died down), can offer expertise on capacity building.

Available/Applicable Datasets:

Assessing and valuing ecosystem services and environmental degradation **-**

- EPA has integrated assessment models that allow us to map environmental damages from natural and human-induced disasters, (e.g., forest fires) related to both air and water pollution.
- Fate and transport models and other environmental engineering models that can map degradation of ecosystem and environmental services spacially and ultimately to beneficiaries.
- Valuation models that allow monetization of ecosystem services (those ideally, these models would need to use Ukraine specific data.)

Waste Management

- Industrial Chemicals
    - Models and tools are available at [HYPERLINK "https://www.epa.gov/tsca-screening-tools"]
    - General information [HYPERLINK "https://www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca/epas-review-process-new-chemicals" \l "tools"]

- Hazard Models [HYPERLINK "https://www.epa.gov/tsca-screening-tools/using-predictive-methods-assess-hazard-under-tsca" \l "models"]
- Exposure Models [HYPERLINK "https://www.epa.gov/tsca-screening-tools/using-predictive-methods-assess-exposure-and-fate-under-tsca" \l "fate"]

- Pesticides
  - General information [HYPERLINK "https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks"]
  - Human health related guidance [HYPERLINK "https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/guidance-human-health-risk-assessments-pesticides"]
  - Environmental guidance [HYPERLINK "https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/guidance-pesticide-ecological-risk-assessments-and"]
  - Available models [HYPERLINK "https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/models-pesticide-risk-assessment"]
  - Available databases [HYPERLINK "https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/databases-related-pesticide-risk-assessment"]

Effects on Water

- Natural resources restoration: [HYPERLINK "https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fgulfspillrestoration.noaa.gov%2Frestoration-planning%2Fgulf-plan&data=04%7C01%7CPickard.Brian%40epa.gov%7Cfb3ecbeb3a2f410f1f6008da17e361a7%7C88b378b367484867acf976aacbeca6a7%7C0%7C0%7C637848562602437640%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000&sdata=QSkpRQbbiCxOluoDOi9kBhJ6nEipKKWZ5sUdkCt4jUg%3D&reserved=0"]
- Drinking Water Protective Action Guidance: [HYPERLINK "https://www.epa.gov/radiation/what-drinking-water-pag"]
- [HYPERLINK "https://www.epa.gov/sites/default/files/2017-02/documents/sampling_guidance_for_unknown_contaminants_in_drinking_water_02152017_final.pdf"]
- [HYPERLINK "https://www.epa.gov/esam"]
- [HYPERLINK "https://www.epa.gov/system/files/documents/2021-09/addressing-contamination-of-drinking-water-distribution-systems-from-volatile-organic-compounds-after-wildfires_508.pdf"]
- [HYPERLINK "https://www.epa.gov/coronavirus/information-maintaining-or-restoring-water-quality-buildings-low-or-no-use"]